

1 1. (cancelled)

1 2. (cancelled)

1 3. (previously presented) A maskless lithography system comprising an array of apodized  
2 diffractive elements, each of which focuses an energy beam into an array of images in order to  
3 create a permanent pattern on an adjacent substrate at a focal area and is apodized to reduce at  
4 least one of the main or side lobes in an intensity distribution at a focal area.

1 4. (original) The maskless lithography system as claimed in claim 3, wherein apodized  
2 diffractive elements are Fresnel zone plates.

1 5. (original) The maskless lithography system as claimed in claim 3, wherein apodized  
2 diffractive elements are Fresnel phase plates.

1 6. (original) The maskless lithography system as claimed in claim 3, wherein apodized  
2 diffractive elements are blazed Fresnel zone plates.

1 7. (original) The maskless lithography system as claimed in claim 3, wherein said apodized  
2 diffractive elements are formed of photon sieves.

1 8. (original) The maskless lithography system as claimed in claim 7, wherein said photon  
2 sieves are amplitude photon sieves.

1 9. (original) The maskless lithography system as claimed in claim 7, wherein said photon  
2 sieves are phase photon sieves.

1       10. (original) The maskless lithography system as claimed in claim 7, wherein said photonic  
2       sieves are alternating phase photonic sieves.

1       11. (original) A maskless lithography system comprising an array of diffractive elements,  
2       each of which focuses an energy beam into an array of images in order to create a permanent  
3       pattern on an adjacent substrate and has a focusing efficiency of at least 50%.

1       12. (original) The maskless lithography system as claimed in claim 11, wherein said  
2       diffractive elements are 100% transmissive.

1       13. (original) The maskless lithography system as claimed in claim 12, wherein said  
2       diffractive elements are alternating phase photon sieves.

1       14. (previously presented) A maskless lithography system comprising an array of Bessel  
2       zone plates, each of which converts an energy beam into an array of Bessel beams in order to  
3       create a permanent pattern on an adjacent substrate.

1       15. (new) The maskless lithography system as claimed in claim 11, wherein said diffractive  
2       elements are blazed Fresnel zone plates.

1       16. (new) The maskless lithography system as claimed in claim 11, wherein said diffractive  
2       elements are apodized Fresnel zone plates.

1    17. (new) A maskless lithography system comprising an array of apodized phase photon  
2    sieves, each of which focuses an energy beam into an array of images in order to create a  
3    permanent pattern on an adjacent substrate at a focal area and is apodized to reduce at least one  
4    of the main or side lobes in an intensity distribution at a focal area.